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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,885	11/04/2003	Melissa D. Boyd	200314101	6722

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EXAMINER

TENTONI, LEO B

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/701,885

Applicant(s)

BOYD ET AL.

Examiner

Leo B. Tentoni

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 and 68-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 and 68-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1732

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4, 6, 9-12 and 15-29 are rejected under 35

U.S.C. 102(e) as being anticipated by Patel et al (U.S. Patent Application Publication 2004/0036200 A1) for the reasons of record.

2. Claims 1-6, 9-12, 15-29, 68, 69, 73 and 79 are rejected

under 35 U.S.C. 102(e) as being anticipated by Patel et al (U.S. Patent Application Publication 2004/0145088 A1) for the reasons of record and with further comment below.

Patel et al also teaches a process including the steps of selectively applying a UV initiator in a predetermined pattern to a liquid material (wherein the pattern defines a cross-section) and exposing the UV initiator to UV light to cross-link the material in a predetermined pattern.

3. Claims 1-6, 9-12, 15-29, 68, 69, 73 and 79 are rejected

under 35 U.S.C. 102(e) as being anticipated by Patel et al (U.S.

Art Unit: 1732

Patent Application Publication 2004/0207123 A1) for the reasons of record and with further comment below.

Patel et al also teaches a process including the steps of selectively applying a UV initiator in a predetermined pattern to a liquid material (wherein the pattern defines a cross-section) and exposing the UV initiator to UV light to cross-link the material in a predetermined pattern.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in

Art Unit: 1732

order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 7, 8, 13, 14, 30, 70-72, 74-78 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al (either U.S. Patent Application Publication 2004/0036200 A1, U.S. Patent Application Publication 2004/0145088 A1 or U.S. Patent Application Publication 2004/0207123 A1) for the reasons of record.

Response to Arguments

7. Applicant's arguments filed on 01 September 2006 have been fully considered but they are not persuasive.

8. Applicant argues that Patel-1, Patel-2 and Patel-3 do not teach or suggest "selectively ink-jetting an ultraviolet initiator into a predetermined area" as part of a method of solid freeform fabrication of a three-dimensional object. Examiner responds that the Patel et al references do teach this aspect as follows. In Patel-1, paragraphs [0008] and [0011] describe applying a liquid material in a pattern, paragraphs [0034] and [0035] describe that the liquid material may contain initiators and paragraphs [0020] and [0038] describe using UV light to cross-link (or cure) the material. In Patel-2, paragraph [0009] describes applying a liquid material in a

Art Unit: 1732

pattern, paragraphs [0019] and [0020] describe that the liquid material may contain initiators and paragraph [0032] describes using UV light to cross-link (or cure) the material. In patel-3, paragraph [0008] describes applying a liquid material in a pattern, paragraphs [0028] and [0034] describe that the liquid material may contain initiators and paragraph [0018] describes using UV light to cross-link (or cure) the material.

9. Applicant argues that the Patel et al references do not teach or suggest the limitations of claims 2 and 26. Examiner responds that the Patel et al references do teach these limitations because the Patel et al references teach forming the three-dimensional object layer-by-layer (i.e., ink-jetting a UV initiator (on a previously deposited phase-change material) and then depositing a phase-change material).

10. Applicant argues that the Patel et al references do not teach or suggest the limitation of claim 5. Examiner responds that Patel-2 (paragraph [0011]) and Patel-3 (paragraph [0008]) teach this limitation.

11. Applicant argues that the Patel et al references do not teach or suggest the limitation of claim 17. Examiner responds that Patel-1 (paragraph [0032]), Patel-2 (paragraph [0072]) and Patel-3 (paragraph [0047]) teach this limitation.

Art Unit: 1732

12. Applicant argues that the Patel et al references do not teach or suggest the limitations of claims 20 and 21. Examiner responds that Patel-1 (paragraph [0034]), Patel-2 (paragraph [0019]) and Patel-3 (paragraph [0029]) teach these limitations.

13. Applicant argues that the limitations of claims 7, 8, 13, 14 and 30 are not taught or suggested by the Patel et al references. Examiner responds that these limitations are suggested by the Patel et al references. With respect to claims 7, 14 and 30, the Patel et al references teach ink-jetting a liquid material (containing an initiator) onto a deposited material such that the liquid material permeates into the deposited material and such permeation may be improved by heating (e.g., liquefying) and agitating the deposited material. With respect to claim 8, the Patel et al references teach electromagnetic radiation and infrared radiation is one type of electromagnetic radiation. With respect to claim 13, the Patel et al references teach removing excess material (i.e., material which has not been cross-linked or cured) and heating excess material (e.g., to liquefy the material) facilitates removal of the excess material.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1732

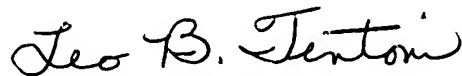
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leo B. Tentoni whose telephone number is (571) 272-1209. The examiner can normally be reached on Monday - Friday (6:30 A.M. - 3:00 P.M.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina A. Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1732

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Leo B. Tentoni
Primary Examiner
Art Unit 1732

lbt